

CLAIMS

We claim:

1. An aircraft door and frame assembly comprising:
an aircraft door; and
- 5 an aircraft door frame having a door receiving opening to receive said aircraft door.
2. The aircraft door and frame assembly of claim 1 wherein said aircraft door frame is an outer frame edge for connection within a rough opening in a fuselage of an aircraft.
- 10 3. The aircraft door and frame assembly of claim 2 wherein said aircraft door is monolithic and said aircraft door frame is monolithic.
4. The aircraft door and frame assembly of claim 1 wherein the aircraft door has an outer panel integrally formed with a plurality of ribs and a plurality of stringers.
- 15 5. The aircraft door and frame assembly of claim 1 including a latch mechanism connected with said aircraft door.
6. The aircraft door and frame assembly of claim 1 further including:
a door stop pin coupled with said aircraft door;
a door stop pad coupled with the aircraft door frame, said stop pin and stop pad
- 20 being aligned with one another to limit the movement of said aircraft door relative to said aircraft door frame.
7. The aircraft door and frame assembly of claim 1 including a seal between said aircraft door and said aircraft door frame.

8. The aircraft door and frame assembly of claim 1 wherein said aircraft door is one of an emergency exit or cargo door.
9. The aircraft door and frame assembly of claim 1 wherein said door receiving opening includes an inwardly extending seal flange.
- 5 10. The aircraft door and frame assembly of claim 1 wherein said aircraft door includes an outer peripheral edge and a seal seat provided adjacent to said outer peripheral edge for engagement with said seal.
11. The aircraft door and frame assembly of claim 10 wherein said door receiving opening includes an inwardly extending seal flange.
- 10 12. A method of installing an aircraft door into an aircraft comprising:
providing a rough opening with a pre-constructed fuselage of an aircraft;
providing a prehung aircraft door and frame assembly including an aircraft door and an aircraft door frame;
securing said aircraft door frame within said rough opening; and
15 mounting said aircraft door to said aircraft door frame.
13. The method of claim 12 including mounting said aircraft door to said aircraft door frame without modification of said aircraft door.
14. A method of manufacturing an aircraft door and frame assembly of the type comprising a monolithic door component and a monolithic door frame
20 component, the method comprising:
providing an aircraft door workpiece and an aircraft door frame workpiece;
cold forming said aircraft door workpiece and said aircraft door frame workpiece;
and

machining said aircraft door workpiece and said aircraft door frame workpiece
utilizing high velocity machining after said cold forming.

15. A method of manufacturing an aircraft door and frame assembly which
includes a monolithic door component and a monolithic door frame component,
5 the method comprising:
rough machining a first piece of stock for said aircraft door component;
rough machining a second piece of stock for said aircraft door component;
forming said first piece of stock;
forming said second piece of stock;
10 clamping said formed first piece of stock for semi-finish machining and semi-
finish machining said first piece of stock;
releasing and reclamping said first piece of stock;
finish machining said first piece of stock to form said aircraft door component;
clamping said formed second piece of stock for semi-finish machining, and semi-
15 finish machining the second piece of stock;
releasing and reclamping said second piece of stock; and
finish machining said second piece of stock to form said aircraft frame
component.

- 16 The method claim 15 including deburring and applying finish treatments
20 to said first and second pieces of stock.

17. The method of claim 15 wherein said aircraft door component includes an
outer panel and a support frame including a rib and a stringer

18. The method of claim 15 wherein aircraft door frame component includes an outer panel and an interior perimeter and a rib.

19. An aircraft comprising:

a fuselage frame structure; and

5 a prehung door assembly mounted to said frame structure, said door assembly comprising;

an aircraft door, and

an aircraft door frame having a door receiving opening to receive said aircraft door.

10 20. The aircraft of claim 19 wherein said aircraft door is monolithic and said aircraft door frame is monolithic.